ATTACHMENT J.4.105

RADIOLOGICAL REQUIREMENTS FOR THE RELEASE OF MATERIALS

AT THE FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

CONTROL NUMBER: [illegible]
FUNCTIONAL AREA PROCEDURE RP-0009
REVISION NO. 2

RADIOLOGICAL REQUIREMENTS FOR THE RELEASE OF MATERIALS AT THE FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

RP-0009

Effective Date: 2/18/97

Originator (Subject Expert): J. R. Wells — James R. Wells — 1/24/97 Date

Checker Concurrence: M.C. Tester — M.C. Tester, Radiological Control Manager — 1/29/97 Date

Approved By: S. L. Hinnefeld — S. L. Hinnefeld, FAM, S&H Division — 2/11/97 Date

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
Fluor Daniel Fernald, Inc.
P. O. Box 538704
Cincinnati, Ohio 45253-8704

TABLE OF CONTENTS

LIST OF ATTACHMENTS

ISSUE AND REVISION SUMMARY

Revision	Date	Description of Issue or Revision
0	5/26/94	Initial Implementation
1	6/12/95	Being revised to incorporate changes initiated by J. Wells and format changes in accordance with MS-08-1001.
2	2/18/97	Revision initiated by J. Wells to incorporate ICPs IC95-068 and IC95-069; and to update references and responsibilities to reflect the FDF reorganization.

1.0 PURPOSE

To establish the methods and requirements for the release of materials from Controlled Areas or from Radiological Areas established to control surface or airborne radioactivity to the Controlled Areas.

2.0 SCOPE

This procedure discusses unrestricted and restricted release of material to the uncontrolled area and the release of material from Radiological Areas to Controlled Areas. It applies to all FEMP personnel involved in the release process. The survey requirements of this procedure do not apply to materials exiting Controlled Areas that are established based on radiation levels alone or to materials being shipped as radioactive material per 49CFR.

3.0 REFERENCES

3.1 RM -0020, FERMCO Radiological Control Requirements Manual

3.2 DOE Performance Objective for Certification of Non-Radioactive Hazardous Waste (REV 1, dated October 10, 1994)

3.3 Regulatory Guide 1.86, Termination of Operating Licenses for Nuclear Reactors

3.4 SD-ESH-BAS-3013, FEMP Technical Basis Document for the Use of Portable Instrumentation

3.5 SD-ESH-BAS-3014, Decision Basis to Release Materials For Unrestricted Use

3.6 RC-RDA-010, Radiological Contamination Surveys

3.7 RP-0010, Identification and Movement of Radioactive Material

3.8 SR-0004, Establishment and Management of Radioactive Material Management Areas (RMMAs)

3.9 RC-DPT-012, Radiological Records Management

3.10 RC-DPT-023, Quality Control of Radioactivity Counting Systems

3.11 SD-ESH-BAS-3022, Technical Basis: Quality Control of Radioactivity Counting Systems

3.12 RP-0003, Performing Personnel Monitoring

4.0 RESPONSIBILITIES

4.1 General Employee - Notifies Radiological Control to perform a radiological release survey prior to removing materials from Controlled Areas or Radiological Areas established to control the spread of contamination. This includes movement of material from a Controlled Area to the uncontrolled area unless that area is posted based on radiation levels alone, or movement of material from a Contamination Area, High Contamination Area, or Airborne Radioactivity Area to the Controlled Area. Provides documented process knowledge, analytical data, or other documentation as requested by Radiological Control personnel when necessary to support the release decision.

4.2 Manager, Radiological Control - Ensures that all radiological control personnel performing this procedure are trained to this procedure. Designates additional personnel who are authorized to act as a Material Release Evaluator outside of those positions/job titles already authorized by this procedure.

4.3 Material Release Evaluators

1. Evaluates the unrestricted release of material when any of the following conditions are encountered:

   A. Material has the potential for contamination in areas which are inaccessible for proper survey.

   B. Process knowledge is used to support the release decision.

   C. Material has the potential of contamination beneath a coating applied while the material was in the Controlled Area.

   D. Material has the potential for volume or in-depth radioactivity within the material matrix.

   E. Special case items are being released such as radioactive consumer products, industrial sources, etc.

   F. Material has detectable activity present, but the activity is below the conta. nation limits listed in Attachment A.

2. For material with detectable contamination but less than the release limits of Attachment A, performs an evaluation to ensure that all reasonable attempts have been made to reduce the residual radioactivity to as low as reasonably achievable prior to the release.

3. Evaluates and approves the restricted release of all material prior to exiting the Controlled Area of the FEMP to ensure the material is controlled or of such condition that no reasonable potential exists for the spread of contamination beyond the Controlled Area. The evaluator ensures that the Radiological Control Technician and the individual receiving the material understand all restrictions placed upon the restricted release.

4.4 OP&I, Radiological Control Department personnel - When requested, provides regulatory or technical guidance to assist those personnel involved in the release process. Approves the restricted release of material when the material is to exit beyond the FEMP property boundary.

4.5 Radiological Control Technicians (RCT) - Performs and documents all radiological release surveys. Routes survey data and related release packages for approvals as required in this procedure and Reference 3.9.

4.6 Radiological Control Supervisor - Reviews the Restricted Release Log on a weekly basis to verify correctness and to maintain cognizance of material status. Review radiological release surveys. Ensure RCTs performing the requirements of this procedure are qualified in accordance with Reference 3.1.

5.0 GENERAL

5.1 Acceptable surface contamination levels for known radionuclides are set forth in Attachment A, Surface Contamination Limits.

5.2 Appropriate instrumentation for release surveys based on instrument detection limits and the isotope of concern are listed in Attachment B, Survey Methods and Isotopes of Concern. If the Lower Limit of Detection of the monitoring method in use is below the removable limits of Attachment A for the specific isotope of concern then removable surveys are not required and the material may be evaluated based on direct monitoring methods alone.

5.3 The specific isotope of concern for various areas within the FEMP site are listed in Attachment B. If isotopes other than U-238 and associated daughter products are suspected, then the most restrictive release limit must be applied until adequate isotopic data can be obtained.

NOTE: Attachment B serves as a general guideline only. Isotopic data or process knowledge may be used over these general guidelines where appropriate.

5.4 When normal or depleted uranium is the contaminant of concern, beta surveys alone are acceptable for verifying compliance within the release limits.

5.5 Contamination surveys may be performed with hand held portable instruments or automated equipment provided that the contamination limits given in Attachment A can be detected.

5.6 Materials with inaccessible areas which are likely to be contaminated but are of such size, construction, or location as to make them inaccessible for survey shall be assumed to exceed the limits for release, unless the item can be disassembled to permit an adequate survey or well documented process knowledge can be applied to certify that internal contamination is not probable.

5.7 Consumer products containing nominal amounts of radioactivity or naturally occurring radioactivity excepted from regulation or licensing under EPA, DOE, or NRC regulations at the time of receipt at the FEMP may be released for unrestricted use provided the existing radioactivity has not been enhanced or concentrated as a result of site operations and evidence can be provided that the item has not been contaminated while at the FEMP. Isotopic analyses, process knowledge, or surface contamination surveys should be performed as required based on a case-specific evaluation of the material.

5.8 Items such as liquids, bulk materials (sand, concrete rubble, etc.) must be evaluated for the potential for volume or in-depth contamination within the material matrix prior to release. A combination of process knowledge, surface contamination data, or analytical data as appropriate must be provided to support the rationale that no radioactivity could have been added to the material as a result of site operations.

5.9 All documented process knowledge used to support the release decision must be attached to the release package.

5.10 Items with detectable fixed contamination that is less than the unrestricted release limits of Attachment A must be further evaluated prior to unrestricted release to ensure that all reasonable attempts have been made to reduce the residual radioactivity on the item to as low as reasonably achievable.

5.11 Contamination surveys are to be performed in accordance with the requirements of Reference 3.6.

5.12 Direct frisk release surveys with portable instruments may not be performed in an area of background exceeding 300 cpm beta/gamma or alpha instrument background >12 cpm.

5.13 Items with surface contamination exceeding the release limits of Attachment A must be identified and handled as radioactive material in accordance with Reference 3.7.

5.14 Personal items are to be surveyed at the control point exits in accordance with the posted frisking instructions and Reference 3.12. These items may be surveyed by the material owner or by the RCT if requested.

5.15 Material that is in its original sealed manufacturers packaging or material with internal surfaces sealed from the environment with no potential for contamination within the material internals may be released based on surface contamination monitoring techniques only. Material Release Evaluator concurrence is not required in this situation.

5.16 Materials not immediately released upon survey shall be controlled to prevent contact with radioactive contamination while awaiting release.

5.17 Materials not released to uncontrolled areas within eight hours following survey shall be resurveyed unless each of the following conditions have been met. This step is not applicable to items placed in a staging area as discussed Step 5.18.

1. The material or articles are placed in a container or building that meets the unrestricted release limits.

2. The containers or buildings are sealed using a tamper proof seal with a unique identification number. If required, tamper proof tape with RCT initials across the seal may be used but this is least preferred. Containers may be anything that prevents contamination, such as drums, sealands, toolboxes, etc.

3. The seal identification number shall be recorded on the radiological survey report form.

4. If the container is to be released with the materials inside, its external surfaces must be resurveyed per this procedure prior to release.

5.18 When storage in containers or buildings is not practical, large items or lots of items may be placed in a staging area while awaiting survey results or while finalizing release documentation with the following additional controls.

NOTE: The use of staging areas should be minimized. Immediate release following survey or the controls outlined in Step 5.16 should be pursued prior to establishing these areas.

1. A comprehensive unrestricted release survey must be performed on all materials prior to entry into the staging area.

2. Radiological Control oversight of the area (Radiological Control notification prior to entry) must be maintained to prevent mixing of previously surveyed items and potentially contaminated material.

NOTE: If material mixing is suspected then a comprehensive unrestricted release survey must be re-performed on all items within the staging area.

3. A cursory survey (including large area smears as a minimum) shall be performed prior to the actual release of the staged material to the uncontrolled area.

6.0 PREREQUISITES

Supervisor, Radiological Control (or designee)

By reviewing training records, ensure that all radiological control personnel performing this procedure are trained per the requirements of RM-0020.

7.0 PROCEDURE

7.1 UNRESTRICTED RELEASE OF MATERIALS FROM THE CONTROLLED AREA

Radiological Control Technician

1. Determine the material history considering the purpose of the item, the current and past use of the item, location in which the item was stored, and if the item had ever been used for work with radioactive material.

2. Determine the need for material disassembly for access into internals or other inaccessible areas. This determination may require assistance from a Material Release Evaluator.

3. Ensure that any residual radioactive material labels or indicators are defaced from the material. This could include radioactive material stickers, painted trefoils, or other radioactive material symbols.

4. Perform large areas smears on 100% of the effective area of the material to evaluate for gross removable contamination. If no detectable levels of removable contamination are found then proceed to Step 7.1.6.

5. If detectable levels of removable contamination are found, then don protective clothing such as gloves to complete the survey and perform disc smears to evaluate for removable activity per 100 cm^2.

NOTE: The material must be considered contaminated until the results of the disc smear survey prove otherwise.

A. If no detectable levels of removable contamination are found then proceed to 7.1.6.

B. If detectable levels of removable contamination are found on the disc smears, then the material may not be released for unrestricted use without further evaluation and approval by a Material Release Evaluator.

6. Evaluate for fixed activity on 100% of the effective area of the material using direct frisking or automated monitoring techniques.

7. If no detectable contamination is discovered during the survey, then proceed to Step 7.1.10.

8. If detectable contamination is discovered during the survey and the activity is less than the unrestricted release limits outlined in Attachment A, then a Material Release Evaluator must approve the release decision.

9. If contamination levels exceeding the unrestricted release limits of Attachment A are discovered, then the material may not be released for unrestricted use and must be controlled as radioactive material.

10. Document the survey results and fill in the applicable portions of Attachment D, Material Unrestricted Release Form.

11. If any of the conditions of Step 4.3 are met, then route the release package to a Material Release Evaluator for further evaluation and approval of the release decision. If none of these conditions are met then proceed to Step 7.1.13.

Material Release Evaluator

12. Review the release package and the material if needed. If all requirements for unrestricted release have been met, then sign the Material Release Form to approve the release.

Radiological Control Technician

13. Distribute copies of the release package to the survey requester or material owner.

14. Maintain the original copy of the release package in accordance with Reference 3.9.

7.2 RESTRICTED RELEASE OF MATERIALS FROM THE CONTROLLED AREA

Radiological Control Technician

1. Perform a removable contamination survey on 100% of the effective area of the material.

2. Evaluate for fixed contamination of the material using direct frisk or automated monitoring techniques.

3. Document the results of the survey on Attachment C, Radiological Survey Report form.

4. Fill out the applicable portions of Attachment E, Material Restricted Release Form and route the release package to a Material Release Evaluator for review.

5. Log the item in Attachment F, Restricted Release Log, including survey number, item description, date released and the material owner.

NOTE: For items being shipped to an off-site licensed facility, the name of the facility or lab receiving the material should be listed in the Material Owner block and the date returned block is not applicable.

Material Release Evaluator

6. Evaluate for the potential for the spread of contamination if the material is used in the uncontrolled area based on contamination levels on the material, use of the material, etc.

7. List any further administrative controls which may need to be applied to the material to prevent a potential spread of contamination in the comments section of the Material Restricted Release form. This may include storage requirements, limitations of use, containment of the material, RCT escort, or other controls as applicable.

NOTE: Radioactive material must be labeled appropriately and stored in an approved, properly posted area when the material is not in use or under escort by a qualified Radiological Worker.

8. If the requirements for restricted release of the material have been met, then sign the Material Restricted Release form to approve the release.

Radiological Control Technician

9. If the material will be exiting beyond the FEMP property boundary then route the release package to Radiological Control for approval.

NOTE: Radiological Control approval is required to ensure that other regulatory requirements are not violated such as Department of Transportation shipping regulations or facility licensing requirements.

10. Route the release package to the survey requestor for signature. Inform the survey requestor of special requirements associated with the restricted release and the need to contact Radiological Control when the item is returned to the Controlled Area.

Survey Requestor

11. Sign the Material Restricted Release Form accepting responsibility for the material while it is in the uncontrolled area and ensure that all controls applied to the material are met. This step is not applicable when sending radioactive or potentially radioactive materials to licensed facilities.

NOTE: Only FEMP qualified Radiological Workers may sign the responsibility of materials undergoing a restricted release.

12. Inform the Radiological Control Technician when the item is returned to the Controlled Area for material tracking purposes and completion of Attachment F.

13. Distribute copies of the release package to the survey requestor or material owner.

14. Maintain the original copy of the release package in accordance with Reference 3.9.

Radiological Control Supervisor (or designee)

15. Review the Restricted Release Log on a weekly basis to verify completeness and to maintain cognizance of material status.

7.3 RELEASE OF MATERIALS FROM CONTAMINATION AREAS, HIGH CONTAMINATION AREAS, OR AIRBORNE RADIOACTIVITY AREAS TO CONTROLLED AREAS

Radiological Control Technician

1. Don protective anti-contamination gloves, as a minimum.

2. Determine material history considering the purpose of the item, current and past use of the item, location in which the item was stored and if the item had been used for work with radioactive materials.

3. Determine the need for material disassembly for access to the material internals or other inaccessible areas.

4. Verify area background meets the requirements of Step 5.12. If background is excessive then transfer the material to an area of lower background prior to performing the survey.

5. Perform a radiological survey in accordance with Reference 3.6, to evaluate for contamination levels on the material. Document results on Attachment C, Radiological Survey Report Form .

6. If the release limits of Attachment A are met then the item may be released to the Controlled Area.

7. If removable contamination on the material exceeds the surface limits of Attachment A then the material may be conditionally released for movement on-site from one Radiological Area for immediate placement in another Radiological Area in accordance with the requirements of Reference 3.7.

8. If the item has fixed contamination exceeding the Attachment A limits and the removable levels of contamination are below the Attachment A limits then the item may be released to the Controlled Area provided the item is identified as radioactive material in accordance with Reference 3.7.

9. If the item to be released is tagged or identified as radioactive material then note this on the release package.

10. Distribute copies of the release package to the survey requestor or material owner.

11. Maintain the original copy of the release package in accordance with Reference 3.9.

8.0 RECORDS

The following records are generated as a result of this procedure and are to be handled in accordance with Reference 3.9.

8.1 FS-F-1993-1, Radiological Survey Report Form

8.2 FS-F-3915, Material Unrestricted Release Form

8.3 FS-F-3916, Material Restricted Release Form

8.4 FS-F-4502, Restricted Release Log

9.0 DRIVERS

9.1 FERMCO Radiological Control Requirements Manual RM-0020

9.2 DOE Order 5400.5, Radiation Protection of the Public and the Environment

9.3 10 CFR 835, Occupational Radiation Protection

9.4 DOE/EH-0256T, Radiological Control Manual

9.5 DOE Performance Objective for Certification of Non-Radioactive Hazardous Waste (REV 1, dated October 10, 1994)

10.0 DEFINITIONS

10.1 Detectable Activity - Activity detected on the material which exceeds the minimum detectable activity value for the measurement method in use.

10.2 Effective Area - Those areas of the material which are likely to be contaminated such as welding machine cooling fans, installed filters, electric motor armatures, etc.

10.3 Lower Limit of Detection (LLD) - The smallest amount of sample activity that will yield a net count for which there is a confidence at a predetermined level that activity is present. LLD values for various measurement processes are further discussed in Reference 3.5.

10.4 Material Release Evaluator - An individual authorized to evaluate and approve the unrestricted release of materials when special considerations referenced in Step 4.3 are encountered. Unless otherwise approved by the Radiological Control Manager, the Radiological Control Supervisors, Cognizant Radiological Project Engineers, and the Radiological Control Health Physicists are the only personnel authorized to evaluate such items for unrestricted release.

10.5 Personal Items - Items such as personal briefcases, pens, papers, personal umbrellas, personal clothing, etc.

10.6 Process Knowledge - Documented evidence, provided by the material generator, user or owner, demonstrating that no radioactivity could have been added to the material as a result of site operations. This generally includes material handling, usage, and storage methods/procedures or other material history which supports the release. Process knowledge documentation is the responsibility of the material generator but may require assistance from Radiological Control personnel.

10.7 Staging Area - An area established to clearly mark and isolate material which has been surveyed for unrestricted release and is awaiting finalization of the survey data or documentation. This does not constitute a radiological posting and may typically be identified with white rope and notification signs requiring RCT notification or escort prior to entry into the area. Yellow and/or Magenta signs or barricades should not be used for this purpose.

10.8 Radioactive Material Management Area (RMMA) - An area in which the potential exists for contamination due to the presence of unencapsulated or unconfined radioactive material. This term is driven by the DOE EM-30 Performance Objective for Certification of Non-Radioactive Hazardous Waste. In accordance with Reference 3.8, all Controlled Areas of the FEMP are considered RMMAs unless they are controlled based on radiation levels alone. RMMAs do not require special posting.

10.9 Radiological Areas - Any area within a controlled area which must be posted as a "Radiation Area", "High Radiation Area", "Very High Radiation Area, "Contamination Area", "High Contamination Area", or "Airborne Radioactivity Area" in accordance with Reference 3.1.

10.10 Release Package - A collection of documentation supporting the release decision. It generally contains the radiological survey report for the item to be released, a material release form, and any associated documentation of process knowledge. As a minimum, the following information must be contained within the release package:

1. Property description
2. Date on which the release survey was performed
3. Identity of the individual performing the release survey
4. Type and identification of the instrument used
5. Results of the survey
6. Identity of the recipient of the released material
7. Location from which the material was released
8. Material Release Evaluator review and approval of the release (as applicable)

10.11 Restricted Release - A release of material from the Controlled Area of the FEMP in special situations. Examples include but are not limited to temporary transfer of materials between Controlled Areas, material transfers to other DOE facilities, and release of samples to off-site NRC or agreement state licensed labs for analysis. This release applies administrative controls on the material to maintain it under FEMP control (or transfers the material control to another facilities radiological control program in the case of off-site shipments) and ensures the material is returned to the Controlled Area after use.

10.12 Unrestricted Release - Release of material from administrative control after confirming that residual radioactive material meets the requirements of this procedure.

Attachment A
SURFACE CONTAMINATION LIMITS[a,f]

NUCLIDE[f]	FIXED PLUS REMOVABLE		REMOVABLE[b,e]
	AVERAGE[b,c]	MAXIMUM[b,d]	
U-nat, U-235, U-238, and associated decay products, alpha emitters.	5,000 dpm /100 cm^2	15,000 dpm /100 cm^2	1,000 dpm/100 cm^2
Transuranics, Ra-226, Ra-228, Th-230, Th-228, Pa-231, Ac-227, I-125, I-129	100 dpm/100 cm^2	300 dpm/100 cm^2	20 dpm/100 cm^2
Th-nat, Th-232, Sr-90, Ra-223, Ra-224, U-232, I-126, I-131, I-133	1,000 dpm/100 cm^2	3,000 dpm/100 cm^2	200 dpm/100 cm^2
Beta-gamma emitters (nuclides with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above.	5,000 dpm /100 cm^2	15,000 dpm /100 cm^2	1,000 dpm /100 cm^2

[a] Where surface contamination by both alpha and beta-gamma emitting nuclides exists, the limits established for alpha and beta-gamma emitting nuclides should apply independently.

[b] As used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

[c] Measurements of average contamination should not be averaged over more than one square meter. For objects of less surface area, the average should be derived for each object.

[d] The maximum contamination level applies to an area of not more than 100 cm^2.

[e] The amount of removable radioactive material per 100 cm^2 of surface area should be determined by wiping that area with dry filter or soft absorbent paper, applying moderate pressure, and assessing the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. When removable contamination on objects of less surface area is determined, the activity per unit area should be based on the actual area and the entire surface area should be wiped.

[f] The limits presented for transuranics, Ra-226, Ra-228, Th-230, Th-228, Pa-231, and Ac-227 are taken from NRC Regulatory Guide 1.86. Consult with Radiological Control when required to apply these limits for unrestricted release.

Attachment B
SURVEY METHODS AND ISOTOPES OF CONCERN

Isotope of Concern	Area [1]	Preferred Survey Technique
Ra-226	K-65 Silo 1 & 2 Residues	Alpha direct frisk in scaler mode. Smears counted on a low background counter.
Th-230	Waste Pit 1-5 Silo 3 in Waste Storage Area	Alpha direct frisk in scaler mode. Smears counted on a low background counter.
Th-232	Pilot Plant Wet Side Building 64, 65, 67, 68 Quonset Huts, Plant 6 Thorium Furnace, Plant 8 Control Room Walls	Alpha direct frisk. Smears counted on a low background counter.
U-235 (enriched uranium)	Enriched material storage areas	Alpha direct frisk. Smears may be counted using portable alpha instruments
U-238 (depleted or normal uranium)	Controlled Areas other than those mentioned above	Beta direct frisk or automated monitor. Smears counted using portable beta/gamma instruments.

[1] Uranium ore material, low enriched uranium and Th-232 were processed in the past in various areas throughout the site including the Pilot Plant, Plants 1, 2/3, 8 and 9. When accessing holdup material within equipment internals, base the isotope of concern on available process knowledge, radiological survey results and available analytical data.

Attachment B
SURVEY METHODS AND ISOTOPES OF CONCERN

Isotope of Concern	Area [1]	Preferred Survey Technique
Ra-226	K-65 Silo 1 & 2 Residues	Alpha direct frisk in scaler mode. Smears counted on a low background counter.
Th-230	Waste Pit 1-5 Silo 3 in Waste Storage Area	Alpha direct frisk in scaler mode. Smears counted on a low background counter.
Th-232	Pilot Plant Wet Side Building 64, 65, 67, 68 Quonset Huts, Plant 6 Thorium Furnace, Plant 8 Control Room Walls	Alpha direct frisk. Smears counted on a low background counter.
U-235 (enriched uranium)	Enriched material storage areas	Alpha direct frisk. Smears may be counted using portable alpha instruments
U-238 (depleted or normal uranium)	Controlled Areas other than those mentioned above	Beta direct frisk or automated monitor. Smears counted using portable beta/gamma instruments.

[1] Uranium ore material, low enriched uranium and Th-232 were processed in the past in various areas throughout the site including the Pilot Plant, Plants 1, 2/3, 8 and 9. When accessing holdup material within equipment internals, base the isotope of concern on available process knowledge, radiological survey results and available analytical data.

Attachment C
FEMP
Radiological Survey Report Form

SURVEY NUMBER: _____

DATE: S	**RCT NAME:**	**RCT BADGE #:**	**PAGE:**
REVIEWED BY:		**REVIEWER BADGE NO:**	___ OF ___

MODEL	SERIAL NUMBER	TYPE (α, β, γ)	CALIBRATION DUE DATE	BKGD. (cpm)	EFF./CF	COUNT TIME (MIN)	MDA (dpm)	PERFORMANCE TEST SAT?	
								YES	NO
		A							

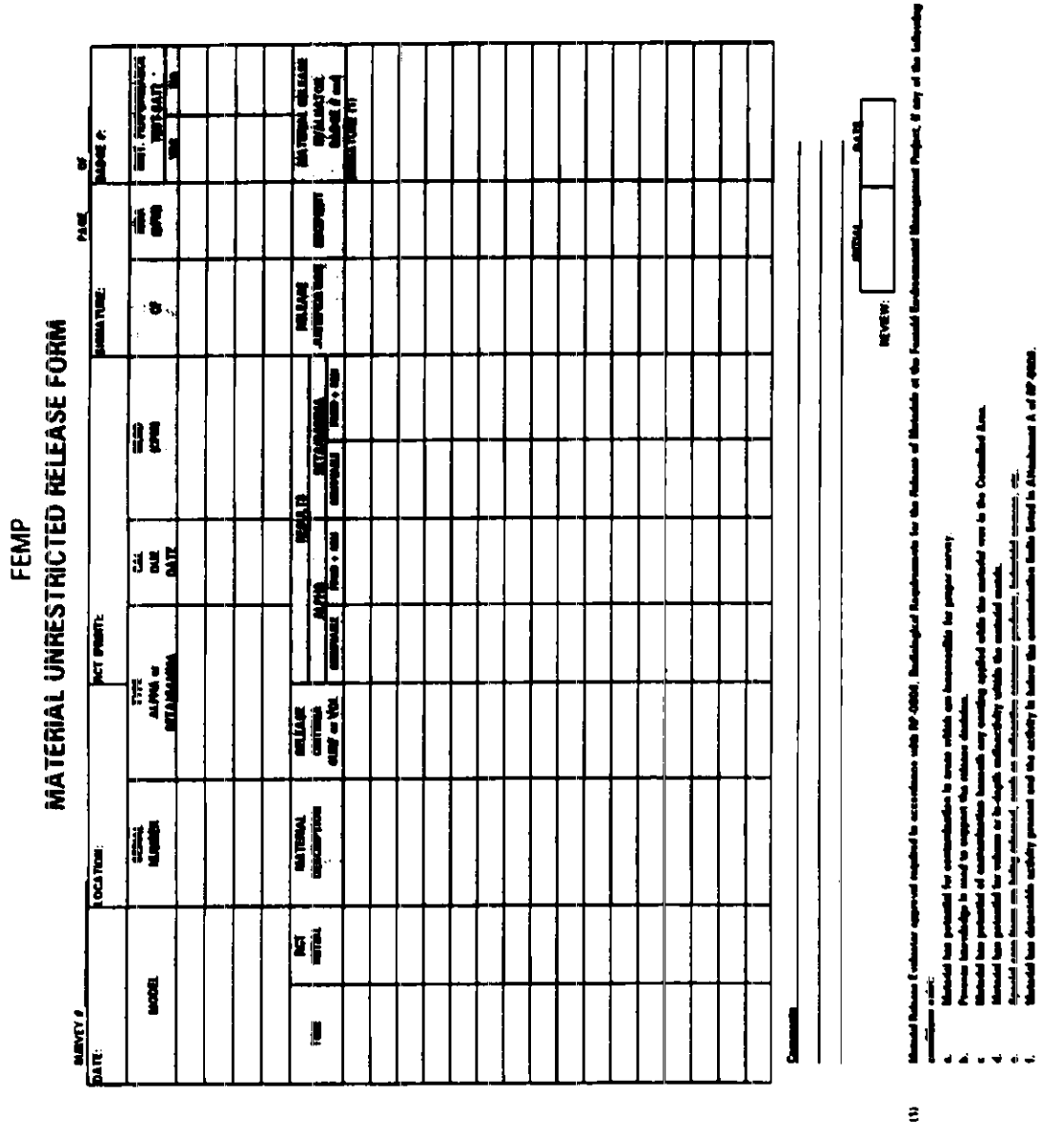
ITEM NUMBER	LOCATION AND/OR DESCRIPTION	HEIGHT (FT.)	DPM/100cm² ALPHA		DPM/100cm² BETA-GAMMA		CORRECTED DOSE RATE (MREM/HR)			
			REMOVABLE (1)	FIXED PLUS REMOVABLE	REMOVABLE (1)	FIXED PLUS REMOVABLE	γ CONTACT	β CONTACT	γ AT ___ FT.	β AT ___ FT
					P					

Note (1): Values identified by an asterisk (*) indicate results are less than the calculated MDA (RC-RDA-010).

FS-F-1993-1 (REV. 04/18,95)

E

Attachment D
Material Unrestricted Release Form (FS-F-3915)



Attachment E
Material Restricted Release Form

Item Number	Item Description	RCT	Material Release Evaluation Print/Signature [1 & 3]	Material Owner/Survey Requestor Print/Signature [2 & 3]
	A			

Additional Comments_____

[1] Signature by Material Release Evaluator indicates the material may be released for restricted use in the uncontrolled area of the FEMP site only. This material is not being released for unrestricted use.

[2] Signature by the Material Owner/Survey Requestor indicates acceptance of responsibility for the material while in the uncontrolled area and the material will be returned to the controlled area following use.

[3] Additional approval by the Manager of Radiological Control or designee is required prior to allowing the material to exit beyond the FEMP property boundary. This allowance may be annotated, by signature, in the additional comments section of the form.

Attachment F
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
Restricted Release Log

RAD. SURVEY NUMBER	ITEM DESCRIPTION	DATE RELEASED	DATE RETURNED*	Material Owner/Survey Requestor*	RCT INIT.

* - For environmental samples or other items undergoing restricted release to off-site NRC or Agreement State licensed facilities, the name of the facility or lab receiving the material should be listed in the Material Owner/Survey Requestor block and the Date Returned block is not applicable.

RCT Supervisory Review_____ **Date**_____